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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,418	12/30/2003	Scott F. Mitchell	STC-03-0010	7838

7590

03/07/2006

Jim Wheelington  
SABIC Americas, Inc.  
SABIC Technology Center  
1600 Industrial Blvd.  
Houston, TX 77478

EXAMINER
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DANG, THUAN D

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/748,418

Applicant(s)

MITCHELL ET AL.

Examiner

Thuan D. Dang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 8 and 10-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8, 10-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5, 7, 8, and 10-12, 14-17 are rejected under 35 U.S.C. 103(a) as obvious over Chu (4,891,463).

Chu discloses a process of aromatization of a paraffin such as ethane and propane to a product containing benzene, toluene, C8 aromatics, methane, and ethane in the presence of catalyst containing a ZSM-5 zeolite and a metal such as Pt (the abstract; col. 5, lines 11-20; col. 4, col. 7, lines 54-62).

Chu does not disclose specifically pick platinum from other metals (col. 3, lines 49-54; see entire patent for details).

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Chu process to select platinum from others since it is expected that using any metal from the list would yield similar results

The ratio of ethane and methane in the product (col. 9, lines 29-35; table 1, and 2).

The condition of temperature, pressure can be found on the paragraph bridging columns 9 and 10.

The ratio of silica and alumina can be found on column 7, lines 16-25.

Chu does not disclose what compounds the produced C8 aromatics are. However, it is expected that these must inherently be xylenes since Chu's process is operated in the presence substantially the same catalyst, feed, and condition.

As disclosed in the full paragraph on column 5, the applicants' claimed amount of platinum is also disclosed by Chu.

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Claim 13 is rejected under 35 U.S.C. 103(a) as obvious over Chu (4,891,463) in consideration with the admitted art disclosed in the specification.

Chu does not disclose using a zeolite as called for in claim 13. However, as disclosed on page 9, this zeolite is well-known.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Chu process by using such a zeolite for making the Chu zeolite to arrive at the applicants' claimed process since it is expected that using any MFI zeolite for making the Chu catalyst would yield similar results.

#### ***Response to Arguments***

Applicant's arguments filed 2/17/2006 have been fully considered but they are not persuasive.

The argument that Chu does not disclose platinum deposited on an aluminosilicate MFI zeolite which does not have the aluminum substituted with gallium is not persuasive since applicants do not exclude gallium from the zeolite structure of the catalyst used for the claimed process. Further, clearly as discussed above, Chu disclose using a catalyst containing ZSM-5 zeolite and platinum.

The argument that the aluminosilicate MFI zeolite does not contain gallium is not persuasive since applicants do not disclose excluding gallium from the MFI zeolite structure.

The argument that the claimed process which uses a catalyst containing platinum yields unexpected results such as the produced amount of ethane, fuel gas (by-products) is not persuasive since while the claimed process is an aromatization process which should have

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aromatics as DESIRED product, the fuel gas including ethane and methane are UNDESIRED products. As shown in the table 1, the catalyst contains platinum produce a large amount of these undesired byproducts when compared with other metals. In the data, the amount of produced aromatics is not shown. According to the data in table 1, if the amount of aromatic were shown, the amount of produced aromatic of the process catalyzed by the platinum would be less than the one of the processes catalyzed by other metals in table 1 since the process catalyzed by platinum catalyst produce too large amount of fuel gas. Therefore, the claimed process does not yield unexpected results as argued by applicants. Assuming arguendo that the process in examples yielded unexpected results as argued, the claimed process is not the exemplified process since the process in the example uses a ZSM-5 catalyst not MFI zeolite catalyst. Further, the claimed process is not a process of aromatization of propane which is used in the example.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 571-272-1445. The examiner can normally be reached on Mon-Thu.

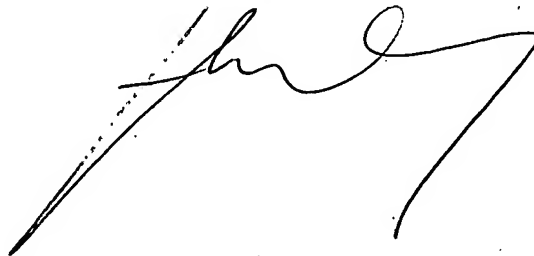
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuan D. Dang  
Primary Examiner  
Art Unit 1764

10748418.20060303

A handwritten signature in black ink, appearing to read 'Thuan D. Dang', is written over a faint dotted line.